

2014

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## Recommended Citation

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<http://aisel.aisnet.org/pacis2014/259>

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# MEASURING CIVIC AWARENESS AND VALIDATING IT'S IMPACT ON E-PATICIPATION: AN EMPIRICAL STUDY ON A G2C PLATFORM ADOPTION IN CHINA

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## Abstract

*In the networking age, Chinese government have done much on official online platforms for providing service and improving interaction between government to citizen (G2C). However the problem is the G2C platforms seem always could attract only part of citizen participation. Although most previous studies discuss e-participation, e-government service adoption from technological perspectives or personal psychological perspectives, this paper tries to explore the determinants of e-participation intention from the civic awareness perspective. After develop a feasible ways in Chinese culture to measure the concept of civic awareness in two dimensions, public value and contractual spirit, the paper propose a conceptual model of the impact of civic awareness on citizens' e-participation intention and validate it by an empirical survey toward a G2C platform of Beijing, the capital of China. The statistical results of empirical data show that the perception of public value make makes dominant role on citizen e-participation. The briefly discussion and managerial implication toward government are also provided in the paper.*

*Keywords: Civic awareness, E-government adoption, E-participation, Public Value, Contractual Spirit.*

# 1 INTRODUCTION

Rapid advances in technology and the advent of the Internet have redefined public services of the government. These services have been changed and emerged to be e-Government. E-Government is defined as the use of information and communications technologies (ICT), particularly Web-based Internet application, to improve the efficiency, effectiveness, transparency and accountability of government (World Bank 2009). Since seeing e-Government as an effective approach for supporting the transition from bureaucrat-centered towards citizen-centered government, Chinese governmental agencies on various levels have all been strongly promoting e-Government service in most of departments. After the implementation of a series of “Golden Projects” (Tang 1998), as well as continuous efforts in extensively building governmental websites (Ma et al. 2005), Chinese government has provided more and more public services through Internet. However, citizen participation of e-government services has been still on a certain low level in China, according to reports released by United Nations, there are the one of key concerns that leads to the ranking of China in the chart of e-Government application maturity (or readiness) has not keep rising in these two years (United Nations 2010; 2012).

Why the user is willing or unwilling to use e-government services or participate interaction between government to citizen (G2C)? Most previous studies discuss this issue from technological perspectives or personal psychological perspectives (Carter & Belanger 2005; Huang et al. 2002; Lee 2008; Wang & Shin 2009; Zhang et al. 2009). The basic hypothesis of those studies is that as long as the function of the e-government service system good enough and humanity, citizen will choose to use it. Actually, however, e-service is only a media of public service in the new technological environment. Citizens’ e-participation attitudes obviously subject to their public participation attitudes. If we continue to explore the deep-seated concerns, the attitude would have strong relations to civic awareness of citizens.

Therefore, the goals of this paper are (1) finding a feasible ways to measure the concept of civic awareness, (2) providing a conceptual model of the impact of civic awareness on citizens’ e-participation intention and validating it. In previous studies, we can easily find such a dilemma: On the one hand, the scholars who attempt to measure the overall rating of civic awareness of a country or region, often emphasize the complexity of the meaning the variable (CIVICUS 2004). On the other, when the civic awareness were seen as a factor who can affect citizens’ certain behavior and perceptions, it would be abstracted to a concept into a single dimension, parallel the degree of one’s civic and political involvement (Dimitrova & Chen 2006; Mahadeo 2009). This study attempts to find a compromise solution, follow a multi-dimensional theoretical framework of civic awareness. It is invaluable for discussing the impact of civic awareness of the impact on e-participation in the Chinese culture context.

## 2 BRIEFLY LITERATURE REVIEW

### 2.1 E-Government Adoption Research

Since Huang et al. (2002) introduced the Davis et al. (1989)’s technology acceptance model (TAM) to conduct research on citizen adoption of e-government in Australia, the volume of e-government adoption literature has gradually increased. Despite of the emergence of adoption research at the organizational level, the study of the adoption of e-government at the individual level based on TAM and other behavioural theories, including G2C and G2E, has become mainstream. Researchers have not only performed extensive investigations and tested models regarding the adoption of e-government in different countries and for different systems and audiences, but they have also attempted to enrich

and extend models from certain dimensions, such as governmental structure, cultural background and so on (Carter & Beleger 2005; Lee 2008; Shareef et al. 2011; Wang & Shin 2009).

It is worth noting that, although in the last two years e-government services adoption research has grown, considerations of the excessively high prevalence of TAM-related research must be considered in the information system domain, and it should be noted that redundant model discussions will distract the attention of academics from the practical problems (Benbasat & Barki 2007). The study on adoption of e-government should not be in the future just satisfied with the simple transplanting of adoption model in the business field into the government circumstances and should avoid following the old ways of caring about theoretical comprehension and model modification in the field of information system in a few years ago. Instead, the characteristics and the practical significance regarding adoption of e-government are required to be deeply probed. E-government should not be merely considered as technological or service innovation to inspect users' adoption and acceptance of innovation, so as to ignore the possible influence of citizens' attitude towards public affairs on its behaviours and intentions when e-government is applied as a carrier of public service and public participations. This is also the original intention of the study paying close attention to the civic awareness.

## **2.2 Civic Awareness Research**

Generally, civic awareness or civic mindedness in the literature reflects individuals' perceptions and attitudes toward society. Because of diverse disciplines and research aims, a wide range of definitions exists that involve a variety of dimensions, such as political ideology, economic value and inequality, democratic value and political tolerance, ethnicity, sense of political alienation and efficacy, political participation and social contract. In related literature, the two main streams provide the enlightenment to us.

The one stream of research focuses on the measurement method of civic awareness. The original research regarding civic awareness concentrates on sociology and pedagogy, which generally provide two approaches to measure them for exploring individual and group issues. First, a number of objective data from society, economy, culture and education are employed to measure the overall civic awareness of the specific social group covering nations, regions or cities, attempting to describe and evaluate the mainstream civic awareness among the group (Van Ingen 2009; Wang 2010). Second, behavior research and the testing of children are applied to examine children's civic awareness and predict their future behavior (Da Silva et al. 2004). However, research on the measure of civic awareness as feature of individual adults is still scarce. Yang's (2008) exploration of civic awareness from both the public value and contractual spirit aspects with the background of Chinese social and economic changes provides an essential theoretical foundation for measuring the civic awareness concept.

The other studies, however, attempt to discuss how civic awareness influence on human's behavior. Chung et al. (2001) validated the elderly person's civic awareness facilitate his or her electoral participation. Kioussis et al. (2005) deemed that civic awareness of adolescent leads to political identity and therefore a stake in the political system. Wang (2008) found that there are significant interactions between civic awareness and social activities participation at least for middle-income stratum. The results of Su et al. (2012) work showed that the quality of civic awareness is not a valid reason for preventing the growth of democracy in China. Although the definitions of civic awareness of those studies are not exactly the same to each other, the literature has repeatedly confirmed that the civic awareness has significant influence on human's participation in the social and public activities in the real lives.

### **2.3 Impact of Civic Awareness on E-Government Adoption or E-Participation**

With respect to the influence of civic awareness on the adoption of e-government, foreign scholars have made a number of initial explorations (Dimitrova & Chen 2006; Mahadeo 2009). However, firstly, the measures of civic awareness (or civic mindedness) used are comparatively simple, and even confused with civic participation, especially compared with related studies in sociology and psychology mentioned above. Secondly, the degree and pattern of the impact from civic awareness is not clear, and relevant discussion and elaboration are relatively superficial.

## **3 THEORETICAL FRAMEWORK**

### **3.1 Definition of Civic Awareness and It's Cultural Implications**

As mentioned above, it is from the single viewpoint that the prior research has interpreted this phenomenon as civic awareness (Dimitrova & Chen 2006; Mahadeo 2009). This phenomenon can be attributable to the result-oriented definition of civic awareness put forth by Western scholars.

According to Heberer (2008), civic awareness is a sense of citizen duty and public spirit of the people. As Hofstede (2005, p.74) said, the vast majority of people in the world live in societies in which the interest of the public over the interest of the individual. Handling the relations with others and societies is crucial. Commitments and contracts are the basis of the public relations of the Western society. Civic awareness and collectivism tend to be positively correlated. In the Chinese cultural context, however, Confucius' five basic relationships construct a social system which abstracted public value from other people interest. Therefore, public value and contractual spirit seem independent to each other in the cultural context. For different culture, Hofstede (2005, p.82) has discuss the question whether individualism and collectivism are two dimensions or the opposite poles of the same one. Just as Hofstede (2001) add Confucius mechanism to four traditional consequences in his model, the increase of dimensions would certainly help us better understand civic awareness in the specific cultural context. Both the philosophical origins and the development of public value and contractual spirit in Chinese culture are discussed in the subsequent sections.

### **3.2 Public Value Perceptions: Public and Privacy**

The perceptions of public value in this study refer to the extent that individuals tend to pay attention to public affairs and interests. In Chinese culture, since the emergence of Qin dynasty, the definition of public and private has existed for thousands of years and has influenced social values and ideas. Over the years, "public" has been closely associated with country and authority. In China, there are centuries-old traditions and a solid foundation for the idea of treating the country as public good, which stems primarily from the axioms and social norms that have been emphasized in the five basic relationships, which include master-follower, father-son, and elder brother-younger brother in Confucianism (Hofstede 2001). Under this system, the public good of the country is equivalent to the private nature of the monarch, and the individual involvement in or contribution to the country or group affairs reflects the morality of the subordination of individual interests to general interest and political importance of obedience to superiors and to the country first. Those perceptions also determine the difference between public values in the Chinese cultural context and the Western context, which leads to the coexistence of various phenomena in China. On the one hand, it is common to destroy public property or have no concern for any public places outside of one's own home. On the other hand, tax payment is considered to be the citizens' obligation.

### 3.3 Contractual Spirit: Emotion and Rationality

Contractual spirit perceptions in this study describe to what extent the individuals are inclined to handle conflicts between the public and private realms by means of contractual right. Contractual spirit, originated from the Jewish culture, was considered as one of the largest impact to the traditional ethics of the contemporary Chinese society (Wang & Yue 2001). For thousands of years, the rule of human relationships (guanxi) has become the context in which relations between the state and private sectors of the economy are understood in China's social structure. Emotion and rationality are confused, which leads to certain behavioral approaches and standards of judgment. The core of human relationships lies in the distance between relations, which determines emotion among people. This concept is the guanxi that is emphasized in considerable research on Chinese culture. Meanwhile, emotion, to some extent, plays a major role in resolving controversies. For instance, in the conflicts between mother-in-law and daughter-in-law, sons usually try to persuade the daughter to compromise even though the mother is wrong. Because of emotion and the ethics of behavior and responsibility, there is mutual trust among relatives, while there is lack of relevant trust between strangers. It is undeniable that promoted population movement caused by economic development enables most people to face stranger society, rather than acquaintance society, with trying to use contract in many cases to deal with the problem can not solved by guanxi. Living in the mixture between contractual society and guanxin society, the citizens have to be influenced by their contractual spirit perceptions in the process of social behaviour.

### 3.4 Relations between Public Value and Contractual Spirit

According to the two characteristics mentioned above, in Chinese culture, the measurement and analysis of personal civic awareness cannot directly adopt the framework of collectivism/individualism suggested by Triandis (1994), which measures individual social value orientation reflected from the relations between the state and individuals by the unitary dimension, because it may confuse the citizens' obedience and the country's pull with citizens' recognition and involvement. The analytic framework of civic awareness fitting with Chinese cultural characteristics should consist of two dimensions, public value and contractual spirit. Based on the two dimensions, Yang (2008) used the four quadrants (see Table 1.) for describing the specific behavior features of different types of citizen.

		Public Value	
		Low	High
Contractual Spirit	High	rights prior, private profit prior	rights prior, public profit prior
	Low	guanxi prior, private profit prior	guanxi prior, public profit prior

*Table 1. Two Dimensions of Civic Awareness (Yang 2008)*

The paper inherit Yang (2008)'s two dimensions. But the public value and contractual spirit is acted as two independent variables in the study due to the different research aims. Thus, the measuring tools used by Yang (2008) will be revised correspondingly, which is elaborated concretely in the following section.

### 3.5 Civic Awareness and E-Participation

The elaboration of civic awareness into public value and contractual spirit is beneficial to us for understanding the determinants of citizens' e-participation intentions. On the one hand, based on the increasing varieties of the public services the websites offer, the popularization of the e-government websites reduces numbers of objective restraints on civil involvement into public affairs and creates a

convenient environment for civil participation, which makes the citizens' self-identity in public morality play a more remarkable influence on their intention of participation. On the other, the e-services based on network platform means the standardization of duty regulations. Under the new framework of informatization, the convenience brought about by human relationship and "guanxi" in the process of traditional services becomes hard to play its role, which virtually strengthens the relations between civil contractual mind and e-involvement. By focusing on e-government system, we find that the breadth extension of e-services principally satisfy the requirements of civil self-identity in public value, while what the standardization of e-service procedures satisfy is the civil self-identity in contractual mind, which are precisely the horizontal and vertical dimensions in the development of e-government (Zhang et al. 2007).

### 3.6 Hypothesis of Model

Based on the analyses and discussions above, we built a research model as shown in figure 1.

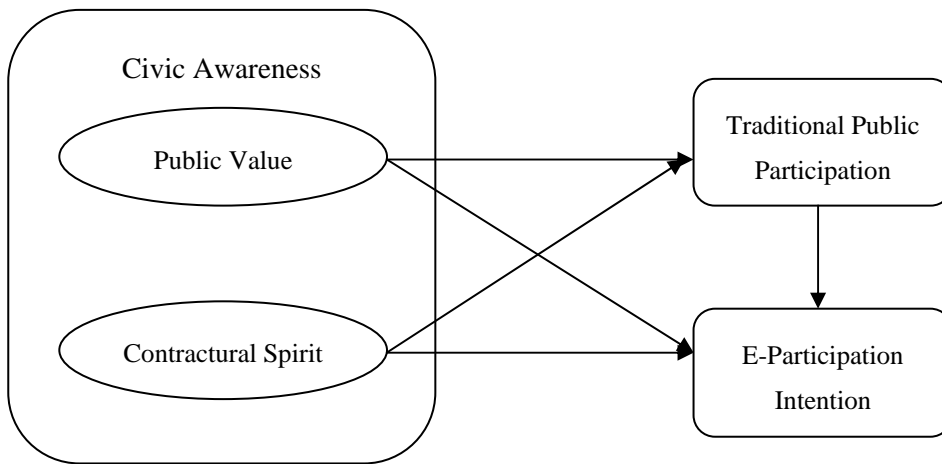


Figure 1. The Theoretical Model

The public value and contractual spirit both play a positive impact on their intention of public participation in citizens' real life and that of e-participation through network platform. And also, citizens' intention of public participation influences their purpose of e-participation. Thus, there is a hypothesis as follows:

- **Hypothesis 1:** Citizens' public value perception has a positive significant influence on their traditional public participation.
- **Hypothesis 2:** Citizens' public value perception has a positive significant influence on their e-participation intention.
- **Hypothesis 3:** Citizens' contractual spirit perception has a positive significant influence on their traditional public participation.
- **Hypothesis 4:** Citizens' contractual spirit perception has a positive significant influence on their e-participation intention.
- **Hypothesis 5:** Citizens' traditional public participation has a positive significant influence on their e-participation intention.

## 4 EMPIRICAL STUDY

### 4.1 Measurement Development of Civic Awareness

To verify the influence of civic awareness on traditional public participation and e-participation, we develop a measurement instrument based on the item set employed by Yang (2008), which includes 37 items. However, the objective of the paper is different from that of Yang (2008), who attempted to determine factors in group feedback data by measuring the 37 items to confirm that the four quadrants constructed by public value and contractual spirit are differentiated and explainable. For the research aim of this study, every item does not actually represent the public value or the contract spirit but rather the mixture of the two dimensions. However, as the public value and contract spirit are considered to be two moderators in this study, the items that correspond to the two variables must be explicitly distinguished. The study requires that the most representative variables of public value and contract spirit are intensively screened from the original items.

Firstly, we accomplished the screening of items by a pilot study at the authors' school, with 15 professors and doctoral students participating in the research. First, the participants are required to single out the following four types of topics from 37 items: (1) high public value; (2) low public value; (3) high contract spirit and (4) low contract spirit, which may not cover all the items. The items that do not fall into any category can remain unselected.

Secondly, the participants are required to order the sequence of items in all four quadrants. Then we got the selected items, including 3 with high public value and 3 with low public value, 2 with high contract spirit and 4 with low contract spirit, are removed. These 12 items can be administered to the participants again. The participants are required to select and sequence 3 representative topics each for public value and contract spirit, and the high and low levels are not differentiated. According to the final calculation of the sequencing scores, the following 6 questions are available for subsequent empirical study (See Table 2.).

Variables	Items
<b>Public Value</b>	PV1: It does not matter whether one's obligation to vote has been fulfilled or not. (Reverse item)
	PV2: Individuals should have an inescapable duty to address national affairs.
	PV3: I will put forward my suggestions with initiative or negotiate with the relevant departments for the affairs of the community.
<b>Contractual Spirit</b>	CS1: The contract is not important if one has some guanxi. (Reverse item)
	CS2: The matters that are the most important to address depend on conscience rather than on rules. (Reverse item)
	CS3: It is not worthwhile to harm a friendship for the sake of principles. (Reverse item)

*Table 2. The Final Selected Items of Two Dimensions of Civic Awareness*

Other constructs were measured using multiple items follow previous studies (Dimitrova & Chen 2006; Mahadeo 2009). Seven-point Likert scale ranging from 1 ("strongly disagree") to 7 ("strongly agree") was used in order to measure all variables in the model.

### 4.2 Empirical Validation

A questionnaire survey was conducted to test the hypotheses of this study. The target G2C platform was open more than ten years for the unifying and standardizing the image promotion of the capital, implementing the government information open, strengthening of administrative supervision,



constructing networking complaint mechanism, providing more convenient public service to the citizen in Beijing, the capital of China. In the past decade, the website sincerely effort on providing more information services to the people, and made a positive contribution on capital's economic development and cultural exchanges.

All respondents came from two university in Beijing, China. The respondents were asked to fill in the two round surveys with three trial tasks with regard to the online services at Capital Windows that are geared toward undergraduate and graduate students from two universities in Beijing. To ensure that the responses from the participants in the study are their real attitudes toward Capital Windows' services, we schedule diverse tasks and leave the participants abundant trial time.

The whole process is divided into three stages.

- Firstly, when the project begins, the participants will be asked to complete the first questionnaire, which includes questions on basic information, prior experiences, expectations and civic awareness. (10 minutes.)
- Secondly, the participants will be asked to complete three tasks, including information openness, service guidance and interactions between the government and citizens. (40 minutes, please find the specific instruction of the three tasks in Appendix A.)
- Finally, the participants must complete the second questionnaire, which concerns tasks completed, confirmation, perceived performance, satisfaction and continuance adoptive intention. (10 minutes.)

The entire process at least requires 60 minutes in total. After completed the three basic tasks, the participants are allowed to make further use of more functions of the Capital Windows before answer the second questionnaire. The deadline of receiving the second questionnaire is no later than 90 minutes after the participant start the first step.

After completing the survey, there are 147 questionnaires are usable and would be analyzed after the incomplete ones were excluded. The percentages of gender (48.1% male and 51.9% female) and age group (13.7% (less than or equal to 19), 74.8% (20-24), 9.9% (25-29), and 1.5% (over or equal to 30)) for the 147 respondents are presented in Table 3.

Category	Percentage (%)
<b>Gender</b>	
Female	48.1
Male	51.9
<b>Age</b>	
<=19	13.7
20-24	74.8
25-29	9.9
>=30	1.5
<b>Education level</b>	
Bachelor Degree	51.9
Master Degree	34.4
Doctoral Degree	13.7
<b>Average time spent online each day</b>	
0-5 hours	79.4
6-10 hours	18.3
11-15 hours	1.5
16-20 hours	0.8

*Table 3. Demographic data of respondents*

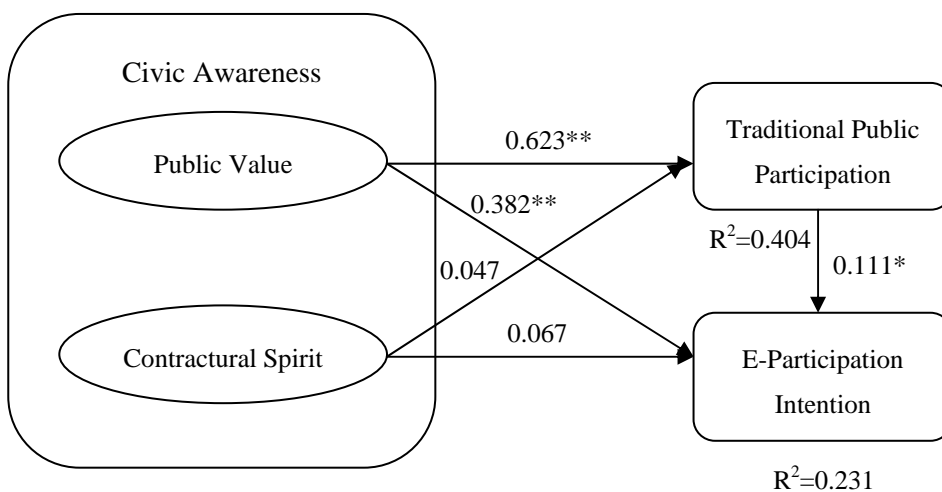
The internal consistency reliability (ICR) was assessed by computing composite reliability coefficients (Fornell coefficients), of which values higher than 0.7 generally indicate acceptable reliability (Gefen & Straub 2005). In our study, the ICR values range from 0.72 (for Contractual Spirit) to 0.88 (for E-Participation Intention). With none of the values for all 4 constructs less than 0.7 (see Table 4.), the reliability of the scales could be accepted. Convergent validity was evaluated by the average variance extracted (AVE). According to related studies, AVE values higher than 0.5 are acceptable. For a satisfactory degree of discriminant validity, the square root of AVE of a construct should exceed inter-construct correlations that reflect the variance shared between the construct and the other ones in the model (Gefen & Straub 2005). In our research although some of the variables' inter-correlations were relatively high, most inter-correlations not higher than any square root of AVE, excludes three of them (See Table 4). Summarily, convergent and discriminant validities of the model both attained an acceptable satisfying level, with all the AVE square root values above 0.7.

	ICR	PV	CS	PP	EP
<b>Public Value (3)</b>	0.771	0.730			
<b>Contractual Sprit (3)</b>	0.716	0.234	0.704		
<b>Public Participation (3)</b>	0.877	0.634	0.193	0.840	
<b>E-Participation Intention (5)</b>	0.883	0.468	0.178	0.366	0.777

Table 4. Reliability and Validity

#### 4.3 Analysis Results

The research model was tested using partial least squares (PLS), a structural equation modeling (SEM) technique suitable for highly complex predictive models. Whereas covariance-based SEM techniques such as LISREL and EQS use a maximum likelihood function to obtain the estimated values in the models, the component-based PLS uses a least-squares estimation procedure. By this means, PLS avoids many of the restrictive assumptions underlying covariance-based SEM techniques, such as multivariate normality and large sample size (Chin 1998; Chin et al. 2003; Gefen & Straub 2005). We used the PLS-Graph software (version 3.0) for the analysis, utilizing the bootstrap resampling method (500 resamples) to determine the significance of the paths within the structural model (Chin et al. 2003; Gefen & Straub 2005). The analysis results are shown in figure 2.



Notes: \* $p < 0.05$ , \*\* $p < 0.001$

Figure 2. PLS Results

The analytical results revealed that not all hypotheses pass the data validation, and particularly the contractual spirit's influences are not verified. However, in researchers' viewpoint, it can attribute to the characteristics of sample involved in the investigation. The participants are all internal students of the university. The result indicates that the mean value of the contractual spirit, with the items of reverse direction having been processed, is 4.5, which is greater than the score of public value's 3.92. It is not in conformity with the judgments made by prior researchers (Yang 2008), who argued the Chinese citizens' cognition of contractual spirit is less than that of public value. The contractual spirit with high level is likely to be the peculiarity reflected by the special group of the university students who receive superior education. It is not only associated with their education, but also the less social relationship and resource they can use since they have not really stepped into society. For the group, the contractual influence is not remarkable, which may be related to their high-level cognition of contractual spirit and ambiguous difference of the sample. But we observed that contractual spirit plays a more influence on e-participation than on traditional citizens' involvement. The phenomenon also explains that the citizens who identify with contractual mind are in tendency to recognize e-government environment.

## 5 CONCLUDING REMARK

From the perspective of civic awareness, the study explored the influence of public value and contractual spirit on citizens' e-participation, in line with the current characteristics of e-government. The major contributions of the thesis lie in three aspects. First, the study put forward the research idea regarding the impact of civic awareness on e-participation. Second, by combining the intrinsic characteristics of Chinese culture, the paper established a theoretical system to measure civic awareness from the two dimensions, namely the public value and contractual spirit. Third, as against specific e-government websites, the research investigated the relations between civic awareness and e-participation. Although some hypotheses are not validated, the practice process, particularly the measurement development of the civic awareness, is significant to the subsequent researches. We will continue to follow the methodology to investigate the influence of civic awareness on citizens' e-participation and the dynamic process of their expectation and satisfaction toward e-government services.

## Acknowledgements

This work was partly supported by the National Nature Science Foundation of China (71102010), and the Tsinghua University Initiative Scientific Research Program (20131089260).

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